Adelaide Desalination Project (ADP) – DBOM

Marine Monitoring Report

For 2017

1	28-Mar-18	R. Liu
Rev	**Date**	**Approved AdelaideAqua**

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1. Ambient Marine Ecological Monitoring

1.1 Subtidal Reef

As Per the agreed OEMMP, ADP have performed this survey in 2016, and the final report has been presented in January 2017. This condition has been closed until 2019.

1.2 Baited Remote Underwater Video

As Per the agreed OEMMP, ADP have performed this survey in 2015, and the final report has been presented in October 2015. This condition has been closed until 2018.

1.3 Infauna Survey

As Per the agreed OEMMP, ADP have performed this survey in 2017, and the final report has been presented.

2. Intake Monitoring

2.1 Seawater Characteristic

Table 1 below shows monthly average value of seawater Characteristics for this reporting period.

Please note data is not available during May, June, July, and August as the plant was not running in that period.

10 minutes intake data for this reporting period are shown in the Appendix.

Table 1 - Seawater Characteristics Summary

Parameter	Conductivity	Temperature	pH	DO
	Us/cm	°C	-	mg/L
January	55970	22.24	8.12	6.89
February	55896	23.37	8.22	7.77
March	56905	23.80	8.12	7.40
April	56800	22.32	8.14	7.12
May	N/A	N/A	N/A	N/A
June	N/A	N/A	N/A	N/A
July	N/A	N/A	N/A	N/A
August	N/A	N/A	N/A	N/A
September	54992	21.80	8.05	9.83
October	56222	21.80	8.17	8.37
November	54674	21.66	8.09	8.74
December	55777	23.80	8.07	9.02

Parameter	Biochemical Oxygen Demand	Suspended solids	Nitrogen (Total)	Phosphorus (Total)	Zinc (Total)	Lead (Total)	Copper (Total)
	mg/L		mg/L as N	mg/L as P	mg/L	mg/L	mg/L
January	2	1	0.16	0.015	0.003	0.001	0.001
February	2	1	0.24	0.018	0.003	0.001	0.001
March	2	1	0.18	0.016	0.003	0.001	0.001
April	2	1	0.26	0.023	0.005	0.001	0.001
May	N/A	N/A	N/A	N/A	N/A	N/A	N/A
June	N/A	N/A	N/A	N/A	N/A	N/A	N/A
July	N/A	N/A	N/A	N/A	N/A	N/A	N/A
August	N/A	N/A	N/A	N/A	N/A	N/A	N/A
September	2	2	0.19	0.026	0.003	0.001	0.003
October	2	1	0.17	0.019	0.024	0.001	0.006
November	2	1	0.22	0.018	0.003	0.001	0.001
December	2	3	0.15	0.017	0.022	0.001	0.001

2.2 Intake Volume

Table 2Daily intake volume for this reporting period are shown in the Appendix.

Table below shows summary of seawater received for this reporting period.

Daily intake volume for this reporting period are shown in the Appendix.

Table 2 - Intake Volume Summary

Date	Seawater Received (ML)	
	SP1	SP2
January	875.49	754.68
February	507.87	543.35
March	500.41	414.18
April	583.32	430.64
May	38.64	8.14
June	54.00	0.62
July	24.05	42.72

Date	Seawater Received (ML)	
	SP1	SP2
August	135.32	127.30
September	688.27	430.29
October	803.87	396.07
November	626.70	412.11
December	239.54	361.38
Total	5077.51	3926.50

3. Discharge Monitoring

3.1 Discharge Characteristic

Daily intake volume for this reporting period are shown in the Appendix.

Table above shows monthly average value of Discharge Characteristics for this reporting period.

Please note data is not available during May, June, July, and August as the plant was not running in that period.

10 minutes discharge data for this reporting period are shown in the Appendix.

Table 3 - Discharge Characteristics Summary

Parameter	Conductivity	Temperature	pH	DO	Cl2
	Us/cm	°C	-	mg/L	mg/L
January	87374	24.34	8.00	6.89	0.00
February	85192	24.77	8.04	7.52	0.00
March	80591	25.70	8.23	8.23	0.00
April	81050	21.28	7.91	10.11	0.00
May	N/A	N/A	N/A	N/A	N/A
June	N/A	N/A	N/A	N/A	N/A
July	N/A	N/A	N/A	N/A	N/A
August	N/A	N/A	N/A	N/A	N/A
September	79103	15.34	7.78	10.13	0.00
October	86635	20.88	7.88	9.65	0.00
November	84852	19.51	7.76	9.55	0.00
December	82124	22.99	7.83	9.05	0.00

Parameter	Biochemical Oxygen Demand	Suspended solids	Nitrogen (Total)	Phosphorus (Total)	Zinc (Total)	Lead (Total)	Copper (Total)
	mg/L		mg/L as N	mg/L as P	mg/L	mg/L	mg/L
January	2	1.1	0.27	0.08	0.004	0.001	0.002
February	2	1.5	0.32	0.11	0.004	0.001	0.001
March	2	1	0.30	0.09	0.003	0.001	0.001
April	2	1.5	0.24	0.13	0.005	0.001	0.001
May	N/A	N/A	N/A	N/A	N/A	N/A	N/A
June	N/A	N/A	N/A	N/A	N/A	N/A	N/A
July	N/A	N/A	N/A	N/A	N/A	N/A	N/A
August	N/A	N/A	N/A	N/A	N/A	N/A	N/A
September	2	2	0.35	0.15	0.004	0.001	0.003
October	2	1	0.24	0.16	0.024	0.001	0.004
November	2	2	0.32	0.13	0.043	0.001	0.001
December	2	2	0.29	0.16	0.028	0.001	0.006

3.2 Discharge Volume

Table 4Daily intake volume for this reporting period are shown in the Appendix.

Table above shows summary of outfall discharge for this reporting period.

Daily discharge volume for this reporting period are shown in Appendix.

Table 4 – Discharge Volume Summary

Date	Outfall discharge (ML)
January	913.54
February	633.50
March	562.45
April	589.57
May	49.71
June	57.99
July	67.98
August	247.42

Date	Outfall discharge (ML)
September	701.72
October	678.16
November	607.38
December	348.89
Total	7362.92

4. Receiving Environment Monitoring

4.1 Average Salinity Discharge (U-149) Results

Table 5 below shows summary of average salinity discharge results for this reporting period. The highest salinity measured at the 100m diffuser was 37.43 ppt and ambient salinity was 36.91 on 05/04/2017 over the reporting period. This verifies that the salinity recorded at the 100m diffuser did not exceed the threshold of 1.3 ppt above ambient salinity.

10 minutes MP2 and MP4 data for this reporting period are shown in the Appendix. No exceedances, issues associated with Average Salinity Discharge (U-149) were addressed during this reporting period.

Table 5 – Average Salinity Discharge Summary

	Average Salinity Discharge											
	January	February	March	April	May	June	July	August	September	October	November	December
Average	35.41	35.87	34.85	36.38	36.42	36.63	36.13	35.32	35.62	35.73	35.50	35.50
Minimum	35.23	35.35	35.26	36.13	36.26	36.38	36.00	35.44	35.07	35.17	35.03	35.03
Maximum	37.10	36.99	36.95	37.43	36.55	36.74	36.78	36.90	36.52	37.26	36.41	36.35

4.2 Salinity Discharge (U-145,U-146) Results

Table 6 below shows summary of salinity discharge ratio results for this reporting period. The highest salinity discharge ratio was 1.95 on 19/01/2017 over the reporting period. This verifiers that the discharge salinity did not exceed the intake salinity by a factor of 2.1. No exceedances, issues associated with Salinity Discharge (U-145, U-146) were addressed during this reporting period.

Table 6 – Salinity Discharge Summary

	Salinity Discharge											
	January	February	March	April	May	June	July	August	September	October	November	December
Average	1.22	1.16	1.07	1.14	1.00	1.00	1.00	1.02	1.10	1.12	1.14	1.06
Minimum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

	Salinity Discharge											
	January	February	March	April	May	June	July	August	September	October	November	December
Maximum	1.95	1.92	1.90	1.91	1.00	1.00	1.00	1.94	1.90	1.93	1.92	1.89